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[TOUCEY, Isaac]

Discovery by the late Dr. Horace
Wells of the applicability of nitrous
oxyd gas. Hartford, 1850.

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DISCOVERY

BY THE LATE

DR. HORACE WELLS

OF THE

APPLICABILITY OF NITROUS OXYD GAS,

SULPHURIC ETHER AND OTHER VAPORS

IN

SURGICAL OPERATIONS,

NEARLY TWO YEARS BEFORE

THE PATENTED DISCOVERY

OF

DRS. CHARLES T. JACKSON AND W. T. G. MORTON.

"Truth crushed to earth will rise again,
The eternal years of God are hers;
But Error wounded writhes in pain,
And dies amid her worshippers."

HARTFORD:

PRESS OF CASE, TIFFANY & CO.

1850.

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DISCOVERY.

WE hardly need observe, that it is indispensable to have a clear understanding of what is meant by the *discovery*, which is said to have introduced a new era in surgery, in order to decide who is entitled to the merit of being its author. If the mere conception of an idea without subjecting it to the test of experiment, be what is meant, then the enquiry, like all others about abstract ideas floating loosely in men's minds, would be a very difficult one, and not worth pursuing. If a mere theoretical opinion, more or less confidently entertained or perhaps expressed, be all that is intended, the enquiry would still be neither less difficult nor of any more value. But if by *discovery* in this case be meant the first, actual, practical, successful application of some one or more of a class of agents, to the purpose of producing *insensibility to pain under surgical operations with safety to the*

subject of them, it will not be difficult to arrive at a just conclusion, as it is a mere question of fact to be settled by evidence, and there will be few competitors between whom it will be necessary to decide.

Before the latter part of the year 1844, the fact was not known, that by the inhalation of a gaseous substance the body could be rendered insensible to pain under surgical operations without injury to the patient. *No one, it is believed, claims the honor of a previous discovery in the ordinary sense of that term.* No one before that time had ascertained the fact by actual experiment. We say this in full view of the claims set up by Dr. Charles T. Jackson, of the city of Boston, because it is not pretended by him, or by any one for him, that he ever performed a surgical operation, or caused one to be performed upon a subject under the influence of sulphuric ether, until that, (the merit of which he claims) performed by the hand of Dr. W. T. G. Morton, on the 30th day of September, 1846, nearly two years after the period of which we are now speaking. If we admit that as early as the winter of 1841-2, when he inhaled the vapor of sulphuric ether as a remedy for the effects of chlorine gas, "he was * * led to believe," as he

now says, "that the paralysis of the nerves of sensation was so great during the continuance of the insensibility, that surgical operations might be performed upon a patient under its influence, without giving him any pain," yet we admit nothing in the least degree at war with the proposition we have advanced. His belief was mere conjecture, or theory, not known to be founded in truth, because not subjected to the infallible test of experiment. He himself regarded it in that light as late as the 26th of October, 1846, when he declared, under his own hand, that he had made the discovery in conjunction with William T. G. Morton, and in the specifications of their joint patent made oath, that to the best of his knowledge and belief, it had not been previously known. It is in the same light we view the remark of Sir Humphrey Davy, that "as nitrous oxyd, in its extensive operation, appears capable of destroying physical pain, it may probably be used with advantage during surgical operations, in which no great effusion of blood takes place." Neither of these conjectures approaches the certainty of discovery, or partakes of its character, so that *in the absence of every other pretension*, it may be said with undoubted truth, that until the latter part of the year 1844, the

practicability of inducing total insensibility to pain under surgical operations with safety to the patient, as a fact of science, was entirely unknown.

It was in the autumn of that year, that the late Dr. Horace Wells, of Hartford, in the State of Connecticut, directed his attention particularly to this subject, and made the experiments of which we are about to speak. In a publication issued to the world just before his lamented death, he makes the following statement: "Reasoning from analogy," he says, "I was led to believe that surgical operations might be performed without pain, by the fact that an individual, when much excited from ordinary causes, may receive severe wounds without manifesting the least pain; as for instance, the man who is engaged in combat may have a limb severed from his body, after which he testifies that it was attended with no pain at the time; and so the man who is intoxicated with spiritous liquor, may be severely beaten without his manifesting pain, and his frame in this state seems to be more tenacious of life than under ordinary circumstances. By these facts I was led to enquire if the same result would not follow by the inhalation of exhilerating gas, the effects of which would

pass off immediately, leaving the system none the worse for its use. I accordingly procured some nitrous oxyd gas, resolving to make the first experiment on myself, by having a tooth extracted, which was done without any painful sensations. I then performed the same operation for twelve or fifteen others, with the like results."

Such is his simple statement of this great discovery. The mere matter of fact for enquiry now is, whether this simple statement is true. The evidence to establish it is irresistible.

1. The statement itself, deliberately made by Dr. Wells, is entitled to great consideration, in connexion with the other proofs accompanying it; and without its aid, the fact is fully established by an overpowering weight of evidence.

2. The testimony of Dr. John M. Riggs, an eminent surgeon dentist, by whom the first experiment, already alluded to, was made on Dr. Wells, at his request, and who was partially associated with him in the subsequent experiments, fully sustains the statement of Dr. Wells, and would generally be regarded as entirely decisive. He says that about the 1st of November, 1844, he was consulted by Dr. Wells on this subject; that it was thereupon agreed to

make a trial on the following day; that accordingly on the next day, he administered to Dr. Wells the protoxyd of nitrogen, at his request, and extracted one of his superior molar teeth, he manifesting no signs of suffering, and stating that he felt no pain during the operation. Dr. Riggs further says, that encouraged and gratified with the success of the first experiment, Dr. Wells and himself continued to administer the gas to various individuals, and to extract teeth under its influence, in the presence of several gentlemen, until fully satisfied of its usefulness and applicability in surgical operations. Dr. Wells avowed to him the intention to communicate the discovery to the dental and medical faculty, and in pursuance of that intention, proceeded to the city of Boston for that purpose, while he, (Dr. Riggs,) continued to use the gas in his dental operations, with great success, the patients assuring him they felt no pain. Dr. Riggs, in a subsequent affidavit states, that these experiments were repeated during the months of November and December, 1844, not less than about twenty times, both alone and in conjunction with Dr. Wells, and uniformly with entire success. He also bears witness to the fact that during this period the anæsthetic properties of the

vapor of sulphuric ether were known to Dr. Wells and himself, were frequently discussed between them, were fully demonstrated by one or more successful trials made with the ether by Drs. Wells and Marcy, and that the nitrous oxyd gas was preferred, not on the ground of any doubt as to the properties of the ether vapor, but because more easy to inhale, less offensive, and in the estimation of Dr. Marcy, more safe. This is the testimony of a gentleman of liberal education, of undoubted character, an impartial witness, to facts in which at the time he took a deep interest, and with which he was perfectly familiar.

3. We have the testimony of Messrs. Mylo Lee, J. Gaylord Wells, William H. Burleigh, and F. C. Goodrich, that they were subjects of a portion of these experiments of Dr. Wells, which were thus, in 1844, attended with perfect success. Mr. Lee testifies that in November, 1844, he submitted to the operation of having a tooth extracted³ under the influence of nitrous oxyd gas, by Dr. Wells, and that the operation was attended with no pain whatever. Mr. J. Gaylord Wells, having heard that Dr. Wells had made this valuable discovery, had six teeth extracted under the influence of the gas, without

the least pain, and for eighteen months afterwards, heard no one mentioned as the discoverer, but Dr. Wells. Mr. Burleigh, having learned that Dr. Wells had made the discovery that by the use of an exhilarating gas or vapor, he could render the nervous system insensible to pain, under severe surgical operations, and that he was using it in his practice with success, took occasion to be present and to witness its effect upon several persons during the operation of extracting teeth, and was so surprised and delighted with its manifest success, that he desired a trial of it upon himself, and had two carious teeth extracted from his lower jaw, without the *least suffering* on his part, though ordinarily, owing to the firmness with which his teeth are fixed in the jaw, he suffers extreme pain from extraction. Mr. F. C. Goodrich had also learned in the winter of 1844, that Dr. Wells had made this great discovery, and was incredulous of the fact; but having been present, by special invitation, and witnessed the apparent success of the process, he was induced to submit to a personal operation to test its utility, and had a large, firmly set bicuspid tooth extracted, under the influence of the gas, without the slightest sensation of pain. Soon after, he witnessed a repeti-

tion of the same process, by Dr. Wells, upon several individuals, accompanied in every instance with perfect success.

This direct evidence of the fact, by impartial and intelligent witnesses, not only in their own case, but in that of others, when they were mere observers, or by-standers, would be deemed sufficient to establish it in the courts of law, or before the proper department of the government, should an enquiry be instituted into the validity of the patent of Drs. Morton and Jackson, founded upon an alleged discovery of nearly two years later date.

Mr. Goodrich, in a further affidavit says, that Dr. E. E. Marcy, of Hartford, was present at the aforementioned operation upon him, and suggested to Dr. Wells, at that time, the inhalation of pure sulphuric ether, in preference to nitrous oxyd gas, recommending it as more easily prepared, and producing, when used under the same circumstances, precisely the same effects; that the propriety of using it and the nature of its effects upon the system, were discussed between them; that Dr. Marcy was very sanguine in his opinion of its capability of rendering the system insensible to pain under severe surgical operations, and expressed his determination to use it

himself, in a surgical operation which he expected to perform in a few days.

4. Dr. E. E. Marcy, formerly of Hartford, now of the city of New York, was present at the rooms of Dr. Wells, by his special request, to witness the operation upon Mr. F. C. Goodrich, and witnessed it with the strong sensations produced by a new and wonderful discovery upon a scientific observer. He says, not only was the extraction accomplished without pain, but the inhalation of the gas was effected without any of those indications of excitement, or attempts at muscular exertion, which do commonly obtain when the gas is administered *without a definite object or previous mental preparation*. "By this experiment," says Dr. Marcy, "two important, and to myself, *entirely new facts*, were demonstrated: 1st. That the body could be rendered insensible to pain by the inhalation of a gas or vapor, capable of producing certain effects upon the organism. And 2d. When such agents were administered, to a sufficient extent, for a definite object, and with a suitable impression being previously produced upon the mind, that no unusual mental excitement, or attempts at physical effort, would follow the inhalation.

"Witnessing these wonderful phenomena—

these new and astounding facts—the idea at once occurred to me, whether there were not other substances analogous in effect to the gas, and which might be employed with more convenience and with equal efficacy and safety. Knowing that the inhalation of sulphuric ether vapor, gave rise to precisely the same effects as those of the gas, from numerous former trials with both these substances, I suggested to Dr. Wells, the employment of the vapor of rectified sulphuric ether—at the same time detailing to him its ordinary effects upon the economy, and the method of preparing the articles for use. Our first impression was, that it possessed all the anæsthetic properties of the nitrous oxyd, was equally safe, and could be prepared with less trouble, thus affording an article which was not expensive, and could always be kept at hand. At the same time, I told Dr. Wells that I would prepare some ether, and furnish him some of it to administer, and also make a trial of it myself, in a surgical case which I expected to operate upon in a few days. Not long after this conversation, (to which allusion is made by Mr. Goodrich, in his affidavit,) I administered the vapor of rectified sulphuric ether, in my office, to the young man above alluded to, and after he had

been rendered insensible to pain, cut from his head an encysted tumor of about the size of an English walnut. The operation was entirely unattended with pain, and demonstrated to Dr. Wells and myself, in the most conclusive manner, the anæsthetic properties of ether vapor."

We have narrated this important experiment in the language of Dr. Marcy, to whose affidavit we take leave to refer, as no part of it can, with any propriety or justice be overlooked by any one, who proposes to subject this matter to a searching examination. It shows the progress and the successful result of these enquiries and experiments of Dr. Wells, and of those skillful and liberal professional gentlemen, who co-operated with him. It shows that the opinion was then entertained by Dr. Marcy, that the constituents of the gas were more nearly allied to the atmospheric air than were those of ether vapor—that the former was more agreeable and easy to inhale than the latter, and upon the whole was more safe and equally efficacious as an anæsthetic agent—and that this opinion was fully confirmed by numerous experiments subsequently made by Drs. Ellsworth, Beresford, Riggs, Terry, Wells and himself. It shows further, that Dr. Wells visited Boston in 1844, for the pur-

pose of communicating his discovery to the faculty of that city, and that on his return, he informed Dr. Marcy that he had communicated it to Dr. C. T. Jackson, and to Mr. Morton, and received from the former and from other medical gentlemen of Boston, nothing but ridicule for his pains.

5. We have the testimony of Dr. Pinckney W. Ellsworth, of Hartford, substantially to the same effect with that of Dr. Marcy. He says that he was perfectly aware of the discovery by Horace Wells, of the anæsthetic property of nitrous oxyd gas, as early as 1844, and of its complete success in many minor operations in that year—that the charge that it is inefficient, cannot apply, as he has himself *removed a thigh under its influence*, with as much success as with ether—that having full information respecting the circumstances attending the birth of this discovery, and also having carefully perused the statements of Jackson and Morton, he has seen no reason to change his opinion, or in the slightest manner to doubt, that to Dr. Wells alone, belongs the *whole* honor of first using any substance by inhalation, for the mitigation of pain.

He was also fully aware of Dr. Wells' visit to Boston, for the purpose as stated at that time, of

announcing his discovery, and giving it a fuller trial at the hospital, in that city, and of his dissatisfaction at the result of his visit.

The testimony of these two last witnesses, no criticism or carping can invalidate. They are not only gentlemen of the highest respectability, but eminent in their profession, acute and accurate observers, not easily deceived, and not capable of deceiving others.

6. An event of this kind could not well occur without attracting the attention of the community in which it happened. Accordingly we have the testimony of Dr. G. B. Hawley, of Hartford, under the date of March 27th, 1847, that during the then last two or three years, he had been familiar with the successful operations of Dr. Wells and other dentists in that city, in extracting teeth without pain, by the aid of nitrous oxyd gas, and that he alone was regarded as the author of the discovery. We have also the testimony of Dr. Fuller, late Superintendant of the Retreat for the Insane, at Hartford, to the fact, that Dr. Wells, for more than two years prior to the 25th of March, 1847, had had the reputation of having made this discovery—that he had himself conversed with several gentlemen, whose character for honor and veracity placed them

above suspicion, who had been the subjects of these experiments, in 1844, and assured him they were attended with no pain whatever ; and that he had no doubt in his own mind that Dr. Wells discovered, and made the first application of this principle in surgical operations. Besides this, we have the testimony of the great body of physicians and surgeons, resident in Hartford, shewing their general acquaintance with these experiments and their confidence in them, and in the honor and integrity of Dr. Wells.

7. That Dr. Wells, after he had made this discovery, did, in the latter part of the year 1844, proceed to Boston, address the class of Dr. J. C. Warren of the Massachusetts General Hospital upon the subject of rendering the system insensible to pain during surgical operations, by the inhalation of exhilarating gas, and perform an operation before them for the purpose of testing his discovery in their presence, is fully established by the testimony of Drs. Kennedy, Mignault, and Taft, and by that of other witnesses. It is true the experiment was not fully successful, by reason of the failure of the patient to take a sufficient quantity of the gas, but that, so far from disproving the fact of the discovery, only serves to throw light upon subsequent events,

while the facts of the visit, the lecture, and the operation, shew incontestably, that the discovery was then made known, under circumstances well calculated to give it great publicity, if Dr. Jackson, Dr. Morton, or others, had been at that time predisposed to admit the principle, or to put any faith or confidence in it. At all events, if Dr. Jackson had then theoretically adopted the opinion, that this class of agents would render the system insensible to pain under surgical operations, it is passing strange that as a mere lover of science he did not come to the aid of Dr. Wells, or that his opinion did not in some other way then see the light. But instead of that, he threw ridicule upon the laudable endeavor of a sensitive young man to bring out one of the great discoveries of the age.

8. But this is not the only notice given to the public of this discovery, and especially to Dr. Jackson, Dr. Morton, and the medical faculty of Boston. The fact was announced in "The Boston Medical and Surgical Journal," of the 18th of June, 1845. In a communication made to the Journal of that date by Dr. Pinckney W. Ellsworth of Hartford, he says: "the nitrous oxyd gas has been used in quite a number of cases, by our dentists during the extraction of teeth, and

has been found, by its excitement, perfectly to destroy pain.” More than a year and a half after Dr. Wells had personally made known to Dr. Jackson, and to Dr. Morton, his former pupil, the result of his experiments, more than one year after the announcement in the *Boston Medical and Surgical Journal*, published at their doors, we find Dr. Jackson and Dr. Morton confederating together, taking out a patent for this principle, and attempting ineffectually to appropriate it to their joint pecuniary benefit! Dr. Jackson as the philosopher, Dr. Morton as the operator! and shortly afterwards, differing in almost every thing else, agreeing nevertheless in one thing—each affirming of the other that he was not entitled to the merit of the discovery!

Such is a brief statement of the proof, by which the mere matter of fact is established, which induced the Legislature of Connecticut to hail the late Dr. Horace Wells as a public benefactor. With this accumulation of evidence on one side, bearing directly upon the point, and nothing to countervail it on the other, it is impossible to resist the conclusion that he was the fortunate author of this great discovery, unless one or the other of two propositions can be established, namely, either that such a paralysis of

the nervous system as would render the subject insensible to pain during the process of extracting teeth, would not embrace the principle of it, or on the other hand, that nitrous oxyd gas is arbitrarily to be excluded from its proper place in a class of agents, all of which are nearly identical in their operation. And even if this difficult task could be accomplished, there would still remain another equally difficult to be encountered, because, it has already been shown, that Dr. Wells went beyond these limits, and that Dr. Marcy, in conjunction with him, subjected the use of sulphuric ether in a larger surgical operation, to the test of successful experiment. But either of the foregoing propositions would be too absurd to require a moment's consideration. The principle is as fully developed by the painless extraction of teeth, as by the painless amputation of a limb; by the successful use of nitrous oxyd gas, as of rectified sulphuric ether. In the language of Dr. Marcy: "the man who first discovered the fact that the inhalation of a gaseous substance would render the body insensible to pain under surgical operations, should be entitled to all the credit or emolument which may accrue from the use of any substances of this nature. This is the *principle*—this is the

fact—this is the *discovery*. The mere substitution of ether vapor or any other article for the gas, no more entitles one to the claim of a *discovery*, than the substitution of coal for wood in generating steam, would entitle one to be called the discoverer of the powers of steam.”

It is unnecessary to pursue the subject further. It would be one of the greatest marvels of this wonderful age, if the world, with these facts before it, did not confirm the decision which it has already pronounced, and award to Dr. Wells the merit of a discovery, which will be remembered and appreciated as long as mankind shall be exposed to suffering, or have occasion to apply an antidote.

TESTIMONY.

I, John M. Riggs, surgeon dentist, of the city and county of Hartford, State of Connecticut, in the United States of America, being of lawful age, and duly sworn, do depose and say :

That on or about the first of November, Anno Domini one thousand eight hundred and forty-four, I was consulted by Horace Wells, surgeon dentist, of the city, county and state as aforesaid, as to the practicability of administering nitrous oxyd gas prior to the performance of dental or surgical operations.

Thinking favorably of the suggestion, it was decided to make trial of the gas in question ; and on the day following, per agreement, the protoxyd of nitrogen was administered to Horace Wells, aforesaid, at his request, and I extracted one of his superior molar teeth ; he manifesting no signs of suffering, and stating that he felt no pain during the operation.

Encouraged and gratified with the success of the first experiment, the aforesaid Wells and myself continued to administer to various individuals the said gas, and to extract teeth while under its influence, in the presence of several gentlemen, until fully satisfied of its usefulness and applicability in surgical operations. I further affirm that the said Wells avowed his intention to communicate the discovery to the dental and medical faculty, and, in pursuance of that intention, proceeded to the city of Boston, State of Massachusetts, for that purpose ; whilst I continued to use the said gas with great success—the patients assuring me they felt no pain.

JOHN M. RIGGS.

STATE OF CONNECTICUT,
Hartford County, ss :

City of Hartford, March 27, 1847.

Personally appeared John M. Riggs, and made solemn oath to the truth of the foregoing affidavit, by him subscribed before me. Given under my hand, and the seal of said city, the day and year above written.

[L. S.] Given under my hand and the seal of said city.

A. M. COLLINS, Mayor.

I, John M. Riggs, surgeon dentist, of the city and county of Hartford, State of Connecticut, in the United States of America, being of lawful age, and duly sworn, do depose and say :

That during the months of November and December, 1844, I made use of inhalation of nitrous oxyd gas, both alone and in conjunction with Dr. Horace Wells, for the prevention of pain during the extraction of teeth.

I declare, that these experiments were repeated during these two months, not less than twenty times, more or less, and uniformly with entire success, thus demonstrating conclusively the anæsthetic properties of this substance. I also further declare, that I was perfectly aware of the anæsthetic properties of the vapor of sulphuric ether, during the period above alluded to, and previous to January 1, 1845, and that I made use of the nitrous oxyd gas in my dental operations, simply because I believed *then*, as I believe *now*, that this last named agent, was more efficient, safer, and altogether preferable to the ether vapor, as an anæsthetic agent, and not because I entertained any doubts respecting the pain-preventing properties of the last named article.

I also declare, that the properties of ether, as an anæsthetic agent, were frequently discussed by Dr. Wells and myself, during the months above named, and that from one or more successful trials, made with the ether, during the year 1844, by Drs. Wells and Marcy, its anæsthetic powers were fully

demonstrated, but a *general* use was not made of it at that time, on account of its being more difficult to inhale, more offensive, and, as was supposed by Dr. Marcy, not so safe as the nitrous oxyd gas.

The anæsthetic properties of the ether vapor and the gas, were not only fully known and appreciated at this time by Dr. Wells and myself, but by Drs. Ellsworth, Fuller, Marcy, and probably many other physicians and citizens of Hartford, and I am only astonished that any man or men could have had the hardihood to come forward, two years after, and claim for themselves a discovery which had already excited the wonder and astonishment of hundreds of the citizens of Hartford, and even called forth from Dr. Ellsworth, a distinct allusion to it, in an article published in the Boston Medical and Surgical Journal, some time in 1845. Since November, 1844, the nitrous oxyd gas has for the most part been employed by me in my dental operations, as an anæsthetic agent, in preference to the ether or chloroform. *The ease and comfort with which it may be inhaled, and its entire efficacy, have amply repaid me for the extra trouble of preparing the gas.*

In conclusion, I take occasion to express my opinion that, if Hartford had possessed a hospital, or the ample surgical facilities which Boston possesses, that the discovery of Dr. Wells would have been more minutely and fully carried out in its details, in 1844. It must be remembered that surgical cases in Hartford, are "few and far between," and that we have, comparatively, no opportunities for the general or common introduction of any article like the one under consideration. Boston, with its array of surgeons, its hospitals, its medical and other Journals, all eager to secure the credit of the discovery to the Athens of America, was the first city, after *Hartford*, where Wells communicated his wonderful discovery. There he met with a reception so cold, that after a single imperfect trial of the gas, amidst the sneers of those around him, he left Boston in disgust and sick at heart, at the unfair disposition manifested towards him.

I also further declare, that subsequently to Dr. Wells' visit

to Boston, for the purpose above named, that Dr. W. T. G. Morton, of that city, a former pupil of Dr. Wells, during the spring or summer of 1845, called at two different times, at the latter's office, which was adjoining my own, in the city of Hartford, and requested Dr. Wells to inform him as to the manner of preparing nitrous oxyd gas for use, and said Morton was by him referred to me, (Dr. Wells' apparatus being at that time in my possession,) and also to Dr. Charles T. Jackson, of Boston, as a professional chemist, for said information. What connection there may have been between the respective visits of Drs. Wells and Morton, to Boston and Hartford, and the subsequent efforts of Drs. Jackson and Morton, to secure a patent, the public can judge. It is my firm belief, that all the knowledge possessed by Drs. Jackson and Morton, upon the subject of pain prevention, by means of anæsthetic agents, originated with Dr. Horace Wells, and was by him communicated to them, and that to him should be awarded the merit of this most important discovery.

JOHN M. RIGGS.

City of Hartford : On the thirteenth day of November, A. D. 1849, the above named John M. Riggs, personally appeared before me, the subscriber, Mayor of Hartford, and made oath, that the foregoing certificate, by him subscribed, is true.

In testimony whereof I have subscribed the same,
[L. S.] and caused the city seal to be hereunto affixed,
the day and year last above written.

PHILLIP RIPLEY.

I, the undersigned, resident of Hartford, Connecticut, do hereby testify, that, more than two years since, I submitted to the operation of having a tooth extracted while under the influence of nitrous oxyd gas. According to the best of my recollection, this was in the month of November, 1844. The gas was given, and the tooth extracted by Horace Wells,

dentist, of Hartford; and I do further testify that the operation was attended with no pain whatever.

MYLO LEE.

STATE OF CONNECTICUT,
Hartford County, ss :

City of Hartford, March 26, 1847.

Then personally appeared before me, Mylo Lee, signer of the foregoing affidavit, and made solemn oath, that the same was true.

[L. S.] Given under my hand, and the seal of said city.
A. M. COLLINS, Mayor.

HARTFORD, March 26, 1847.

I hereby testify, that, more than two years prior to this date, on being informed that Horace Wells, dentist, of this city, had made a valuable discovery, by which means he could extract teeth without pain to the patient, which consisted in the use of stimulating gas, or vapor, I inhaled the exhilarating gas, and, under its influence, had six extracted, without the least pain. I would further state, that for more than eighteen months from the time I first submitted to this operation by the application of gas, I heard no other name mentioned as the discoverer, except that of the above-named Horace Wells.

J. GAYLORD WELLS,
184 $\frac{1}{2}$ Main street.

STATE OF CONNECTICUT,
Hartford County, ss :

City of Hartford, March 26, 1847.

Then personally appeared before me, J. Gaylord Wells, of this city, who signed the within deposition, and made solemn oath that the same was true.

[L. S.] Given under my hand, and the seal of said city.
A. M. COLLINS, Mayor.

A little more than two years since, I learned that Dr. H. Wells, dentist, of this city, had made the discovery that by the use of an exhilarating gas or vapor, he could render the nervous system insensible to pain under severe surgical operations, and that he was using it in his practice, with success. Having an opportunity to witness its effect upon several persons, during the operation of extracting teeth, I was so delighted and surprised with its manifest success, that I desired a trial of it upon myself. The gas was accordingly administered, and two carious teeth were extracted from my lower jaw, without the *least suffering* on my part; though ordinarily, owing to the firmness with which my teeth are fixed in my jaw, I suffer extreme pain from their extraction.

WM. H. BURLEIGH,

Editor of the "Charter Oak."

Hartford, March 25, 1847.

STATE OF CONNECTICUT,

Hartford, County, ss :

City of Hartford, March 26, 1847.

Then personally appeared before me, William H. Burleigh, signer of the foregoing affidavit, and made solemn affirmation that the same is true.

[L. S.] Given under my hand and the seal of said city.

A. M. COLLINS, Mayor.

During the winter of 1844, I learned that Dr. H. Wells, dentist, Hartford, Conn., had discovered the mode of extracting teeth *without pain*. This was accomplished by administering to the persons operated upon, exhilarating gas or vapor, which, it was asserted, rendered the human system insensible to pain. At first I was incredulous of the fact, and received the assertions of individuals familiar with the operation with a degree of distrust. Being, however, by invitation, a personal witness of the process of extracting teeth without pain, under this new mode, discovered and practiced by Dr. Wells with so much apparent success, I was induced to submit to a

personal operation, that I might test its utility. The Dr. was most successful—extracting for me a large, firmly-set bicuspid tooth, without the slightest sensation of pain.

I also witnessed, soon after, a repetition of the same process, by Dr. Wells, upon several individuals, accompanied, in every instance, with perfect success. F. C. GOODRICH.

Hartford, March 27, 1847.

STATE OF CONNECTICUT,

Hartford County, ss :

City of Hartford, March 27, 1847.

Then personally appeared before me, F. C. Goodrich, of this city, who signed the foregoing affidavit, and made solemn oath that the same was true.

[L. S.] Given under my hand and the seal of said City.

A. M. COLLINS, Mayor.

This may certify that during the fall or early part of the winter of 1844, (I am not positive as to the precise time,) I was induced to try the experiment of having a tooth extracted while under the influence of Nitrous Oxyd Gas, which was performed by Dr. H. Wells, Dentist, of this city. Dr. E. E. Marcy, of this city, was present during the operation, and suggested to Dr. Wells, at that time, the inhalation of pure sulphuric ether in preference to Nitrous Oxyd Gas. He recommended it because it was more easily prepared, and produced, when used under the same circumstances, precisely the same effects, as Nitrous Oxyd Gas. The propriety of using pure sulphuric ether—the nature of its effects upon the system—were discussed at some length between Dr. Wells and Dr. Marcy, in my hearing. Dr. Marcy was very sanguine in his opinion of its effect upon the system—its capability of rendering it insensible to pain under severe surgical operations, and expressed his determination to use the sulphuric ether himself in a surgical operation which he expected to perform in a few days.

I make this statement, not because I wish to come before the public in connection with this discovery, but because facts identify me with it. I had much rather remain silent than have my name in any way connected with the subject under controversy; but it is an act of justice due to Mr. Wells that I should make public this fact.

F. C. GOODRICH.

Hartford, July 6, 1847.

STATE OF CONNECTICUT,

Hartford County, ss :

Hartford, July 6, 1847.

Then personally came before me the above named F. C. Goodrich, and made solemn affirmation to the truth of the facts above by him stated.

BENNING MANN, Justice of Peace.

I have been requested by a relative of the late Dr. Horace Wells, to repeat again the facts relating to my connection with the discovery of the anæsthetic properties of nitrous oxyd gas and the vapor of sulphuric ether. This I do with great pleasure, trusting that justice will finally be done to the memory of Dr. Wells, the undoubted discoverer of anæsthetic agents in surgical operations.

I hereby certify and declare, that during the month of October, 1844, I witnessed the extraction of a tooth from the person of F. C. Goodrich, Esq. of this city, by Dr. Horace Wells, after nitrous oxyd gas had been inhaled, and without the slightest consciousness of pain on the part of the gentleman operated upon. Not only was the extraction accomplished without pain, but the inhalation of the gas was effected without any of those indications of excitement, or attempts at muscular exertion, which so commonly obtain when the gas is administered *without a definite object, or previous mental preparation*.

By this experiment two important, and to myself, *entirely*

new facts were demonstrated : 1st, that the body could be rendered insensible to pain, by the inhalation of a gas or vapor capable of producing certain effects upon the organism : and 2d, when such agents were administered to a sufficient extent, for a definite object, and with a suitable impression being previously produced upon the mind, that no unusual mental excitement, or attempts at physical effort, would follow the inhalation.

Witnessing these wonderful phenomena,—these new and astounding facts, the idea at once occurred to me, whether there were not other substances analagous in effect to the gas, and which might be employed with more convenience and with equal efficacy and safety. Knowing that the inhalation of sulphuric ether vapor, gave rise to precisely the same effects as those of the gas, from numerous former trials with both these substances, I suggested to Dr. Wells the employment of the vapor of rectified sulphuric ether, at the same time detailing to him its ordinary effects upon the economy, and the method of preparing the article for use. Our first impression was that it possessed all of the anæsthetic properties of the nitrous oxyd,—was equally safe,—and could be prepared with less trouble, thus affording an article which was not expensive, and could always be kept at hand. At the same time I told Dr. Wells that I would prepare some ether and furnish him some of it to administer, and also make a trial with it myself in a surgical case which I expected to operate upon in a few days. Not long after this conversation (to which allusion is made by Mr. Goodrich in his affidavit,) I administered the vapor of rectified sulphuric ether in my office, to the young man above alluded to, and after he had been rendered insensible to pain, cut from his head an encysted tumor of about the size of an English walnut. The operation was entirely unattended with pain, and demonstrated to Dr. Wells and myself, in the most conclusive manner, the anæsthetic properties of ether vapor. Very little was thought of this particular case at that time, by Dr. Wells or myself, as neither we or Drs. Riggs, Ellsworth, &c. had entertained the slightest doubt of the efficacy of ether vapor, since the

first exhibition of the gas, and especially after the discussion above referred to in Dr. Wells office, in the presence of Mr. Goodrich. But the point which Dr. Wells now wished me to determine was, whether this vapor was as safe as the gas. He informed me that Dr. Riggs had told him that he had inhaled both of these substances when in Washington College, and that it was his impression, from the effects of the two agents upon himself and others, as well as from the views inculcated by Prof. Rogers in his lectures upon these substances before the class, that the inhalation of the ether vapor was more dangerous than that of the nitrous oxyd gas. Accordingly, at the urgent request of Dr. Wells, I read what could readily be procured in relation to both articles, and formed the opinion that the constituents of the gas were more nearly allied to the atmospheric air, than were those of ether vapor—that the former was more agreeable and easy to inhale than the latter, and upon the whole, was more safe and equally efficacious as an anæsthetic agent. Numerous experiments made with the gas by Drs. Ellsworth, Beresford, Riggs, Terry, Wells, and myself since that period, both in large and small operations, *fully confirm the opinion I then expressed* ; and we can only say to those who have so arbitrarily, and we may add, impertinently slighted and underrated the properties of this gas, *that they have never made trial of this substance, and therefore, are incompetent to express an opinion upon the respective merits of these substances.*

If then it be asked why Drs. Wells, Riggs, and myself did not persist in the use of ether vapor, I reply, for the same reasons that are *now* entertained by those who have used the gas in this city, viz. the superior safety, ease of administration, and equal efficacy of the latter.

I also further declare, that I was aware of the fact of Dr. Wells' visit to Boston in 1844, for the purpose of communicating his discovery to the faculty of that city. I also had an interview with Dr. Wells, soon after his return from Boston, when he informed me that he had made known to Dr. C. T. Jackson and Mr. Morton the anæsthetic properties of the

nitrous oxyd gas, the ether vapor, and other analogous substances. He also informed me that he had made an imperfect trial with the gas before Dr. Warren's class, but that the experiment was not satisfactory on account of the patients getting an insufficient quantity of the gas. He further informed me, that his discovery and his whole idea respecting anæsthetic agents, was ridiculed by Dr. Jackson and other medical men of Boston, *but that his former pupil Morton, swallowed this ridiculous idea greedily, and kept it down until 1846, when he ejected it at Washington in the form of a patented compound, mark the word, compound, called Letheon.*

E. E. MARCY, M. D.

STATE OF CONNECTICUT,
Hartford county, ss.

Hartford, December 1st, 1849.

Personally appeared Dr. E. E. Marcy, of this town, and made solemn oath to the truth of the foregoing affidavit by him subscribed. Before me,

BENNING MANN, Justice of Peace.

Hartford, March 25, 1847.

As attempts have been made to deprive Mr. Horace Wells, dentist, of the honor of discovering the effects produced by certain gases in allaying pain, I feel it my duty to state the facts in the case. Dr. Jackson does not claim an earlier discovery than the latter part of 1846, and even then only suggested to Mr. Morton that ether might answer the purpose, and says that the first trials of Morton were successful, "proving exactly as I had predicted." The first trial of Morton, according to his own (Morton's) statement was on the 30th Sept., 1846. Now, I hereby declare, that to my full knowledge, nitrous oxyd gas was administered two years earlier than this, viz., in 1844, by Mr. Wells, and that many teeth were extracted without pain under its influence; and that Mr. Wells went to Boston at that time, as I was then in-

formed, for the purpose of introducing the gas to the attention of surgeons in that city. Moreover, in an article published June 18th, 1845, in the Boston Medical and Surgical Journal, I referred to it as a thing well known and established—the article being headed, “On the Modus Operandi of Medicine,” written to show that many, if not all, local diseases, are cured by specific stimulants. Now, when it is known that Mr. Morton was instructed in his profession by Mr. Wells, and introduced into business by him, we can easily trace the manner in which Mr. M. *might* have derived his information. It is to be borne in mind, also, that Jackson and Morton have, through the public prints, each denied the other his claim—a thing easily settled, one would think, if it in justice belonged to either. In my own mind, there is not a shadow of doubt that the whole merit of the discovery of this thing rests with Wells, and with him alone, although others may have experimented with ether before him. The idea and its practical application *are his*, and let the public concede that to him, which his generosity, unrestricted with patents, demands, and which has been, as far as possible, wrested from him. The claimants in Boston I do not know, and should be unwilling, in any manner, to injure their feelings, but I must say that they are laboring under an hallucination at least; though I cannot but hope they may be able to establish some claim to originality, a task somewhat difficult, as the case appears to stand. These statements are given, not from any personal considerations, but simply as an act of justice; and I hope that the profession, after due deliberation, will give a righteous award.

P. W. ELLSWORTH, M. D.

I was perfectly aware of the discovery by Horace Wells of the anæsthetic property of nitrous oxyd gas as early as 1844.

The discovery of this property possessed by the gas must inevitably, in my opinion, have led to the trial of ether, as

both have been used for many years to produce the same physical phenomena in the human body. It would undoubtedly be the very first thing suggested to one witnessing the anæsthetic effects of nitrous oxyd.

I am perfectly aware of Mr. Wells' visit to Boston, for the purpose as stated at that time of announcing his discovery and giving it a fuller trial at the hospital in that city, and also his dissatisfaction with the result of his visit, both as to the success of his experiment before Dr. Warren and his class, and the reception with which his idea met.

I believe nitrous oxyd gas an efficient anæsthetic agent, not as easily used it is true as some other substances recently experimented with, yet entitled to a high place among these. I was fully aware of its complete success in many minor operations in 1844, and repeated often since that time. The charge that it is inefficient cannot apply, as I have under its influence removed a thigh with as much success as with ether.

Having a full information respecting the circumstances attending the birth of this discovery, and also having carefully perused the statements of Jackson and Morton, I have seen no reason to change my opinion, or in the slightest manner doubt that to Wells alone belongs the *whole* honor of first using any substance by inhalation for the mitigation of pain.

P. W. ELLSWORTH.

STATE OF CONNECTICUT,
Hartford county, ss.

Hartford, Nov. 21, 1849.

Subscribed and sworn to before me,
JAMES C. WALKLEY, Justice of the Peace.

THIS IS TO CERTIFY, That during the last two or three years, I have been familiar with the successful operations of Mr. Horace Wells, and other dentists of this city, in extracting

teeth, without pain, by the aid of nitrous oxyd gas, and he, alone, was regarded as the author of this discovery.

G. B. HAWLEY, M. D.

Hartford, March 27th, 1847.

I hereby certify, that Horace Wells, dentist, has, for more than two years, had the reputation, in this city, of having made a discovery which enabled him, and others, to extract teeth without pain, by the use of exhilarating gas. I have conversed with several gentlemen, whose reputation for honor and veracity places them above suspicion, who have had these operations performed by the said Wells, in the fall of 1844 ; and they assure me that the operation was attended with no pain whatever. There is no doubt in my mind that said Wells discovered and made the first practical application of this principle in surgical operations. By comparing dates of the several claimants, there can remain no doubt of this fact.

S. FULLER, M. D.

Hartford, March 25th, 1847.

TO WHOMSOEVER IT MAY CONCERN :

We, the undersigned, physicians of the city of Hartford, State of Connecticut, U. S. A., do hereby certify, that we know, and have conversed with the persons whose names are appended to the above affidavits, viz., Wm. H. Burleigh, J. G. Wells, F. C. Goodrich, Mylo Lee, and place implicit reliance upon the statements made therein, by each of them, to wit : that the operation of extracting one or more teeth without producing any pain, whatever, was performed upon each of them, by Horace Wells, surgeon dentist, of this city, at or about the time specified by them respectively, in their several affidavits above referred to.

We take pleasure, also, in expressing our entire confidence

in the integrity of the said Horace Wells, than whom no person in our city is more favorably known, as a gentleman of honor and integrity. We know, moreover, that he has for several years past successfully devoted himself to subjects pertaining to invention and discovery.

S. FULLER, M. D.	DAVID S. DODGE, M. D.
GEORGE SUMNER, M. D.	P. W. ELLSWORTH, M. D.
BENJ. ROGERS, M. D.	GURDON W. RUSSELL, M. D.
J. B. BERESFORD, M. D.	G. B. HAWLEY, M. D.
H. ALLEN GRANT, M. D.	E. K. HUNT, M. D.
WM. JAMES BARRY, M. D.	DAVID CRARY, M. D.
E. E. MARCY, M. D.	JOHN SCHUE, M. D.
C. A. TAFT, M. D.	HENRY LEE, M. D.

Boston, March 23, 1847.

We, the undersigned, residents of Boston, Mass., testify, that in the fall of the year 1844, while attending lectures given by Dr. J. C. Warren, of the Massachusetts General Hospital, the students were informed by Dr. Warren, at the close of his lecture, that Mr. Wells, of Connecticut, was present, and would address them upon the subject of rendering the system insensible to pain, during the performance of surgical operations, by the inhalation of exhilarating gas. The students accordingly retired to an adjoining room, where we were addressed upon this subject by Mr. Horace Wells, of Hartford, Conn., who invited us to meet in the evening to witness an operation, which operation was performed in our presence, while the patient was under the influence of the gas.

THOMAS WM. KENNEDY, M. D.,

Office corner of North Charles and Livingston streets, Boston.

P. B. MIGNAULT, M. D.

City of Boston : On this 23d day of March, A. D. 1847, the above named Thomas J. W. Kennedy, M. D., and P. B. Mignault, M. D., personally appeared before me, the subscriber, Mayor of the city of Boston, and made oath that the above certificate, by them subscribed, is true.

[L. S.] In testimony whereof I subscribed the same and caused the city seal to be hereunto affixed, the day and year last within written.

JOSIAH QUINCY,

Mayor of the city of Boston, Justice of the Peace.

Hartford, March 26th, 1847.

I, the undersigned, resident of Hartford, Connecticut, testify, that, in the fall of the year 1844, while attending medical lectures, given by Dr. John C. Warren, of the Massachusetts General Hospital, the students were informed by Dr. Warren, at the close of his lecture, that Mr. Wells, of Connecticut, was present, and would address them upon the subject of rendering the system insensible to pain during the performance of surgical operations, by the inhalation of exhilarating gas. The students accordingly retired to an adjoining room, where we were addressed upon this subject by Mr. Horace Wells, of Hartford, Connecticut, who invited us to meet in the evening to witness an operation, which operation was performed in our presence, while the patient was under the influence of the gas.

CINCINNATUS A. TAFT, M. D.

STATE OF CONNECTICUT,

Hartford, county, ss :

City of Hartford, March 27, 1847.

Then personally appeared before me Cincinnatus A. Taft, who signed the foregoing affidavit, and made solemn oath that the same was true.

L. S. Given under my hand and the seal of said city.

A. M. COLLINS, Mayor.

*Extract from the Boston Medical and Surgical Journal of
June 18th, 1845.*

“The nitrous oxyd gas has been used in quite a number of cases by our dentists, during the extraction of teeth, and has been found, by its excitement, perfectly to destroy pain; the patients appear very merry during the operation, and no unpleasant effects follow.”

*Resolution of the General Assembly of Connecticut of May,
1847.*

Whereas, it being understood by this Assembly that Doctor Horace Wells, of Hartford, discovered, in 1844, that nitrous oxyd gas, or the vapor of ether, inhaled [by] persons, causes insensibility to pain, in amputation or other surgical operations, which discovery has been most honorably noticed by various medical societies in London, and by the Academy of Medicine, and by the Parisian Medical Society in France, and has since been in use in England, France, and in this country; therefore

Resolved by this Assembly, That the aforesaid discovery, by Doctor Wells, of Hartford, Connecticut, of the use of *nitrous oxyd gas*, or *vapor of ether*, in surgical operations, is of great importance to the public, and entitles the inventor to the favorable consideration of his fellow citizens, and to the high station of a public benefactor.

Passed by the Connecticut Legislature in 1847.

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Author

Toucey, Isaac

Discovery by the
late Dr. Wells.

Call no. 1850

ANESTHESIA
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